

MICROMACHINED LYSING DEVICE AND METHOD FOR PERFORMING CELL LYSIS

Abstract of Disclosure

A method and device for performing lysing on a cell-containing fluid, in which the fluid flows through a vibrating micromachined tube to physically rupture the cell walls (mechanical lysis), and/or to mix, agitate or homogenize the fluid during chemical lysis, and/or to mix, agitate or homogenize the lysate for analysis or other processing after lysing. The tube includes a freestanding portion spaced apart from a surface of a substrate on which the tube is formed. The device further includes means for vibrating the freestanding portion of the tube at a level sufficient to rupture the walls of cells in a fluid flowing through the freestanding portion (for mechanical lysing) or to mix the fluid and a chemical lysing additive within the freestanding portion (for chemical lysing).

Figures

Figure 1: A schematic diagram illustrating the experimental setup for measuring the time delay of a signal. The diagram shows a signal source (S) connected to a delay line (DL) and a detector (D). The signal source is connected to the delay line, which is connected to the detector. The delay line is labeled with a time delay τ . The signal source is labeled with a frequency f . The detector is labeled with a time delay τ_d . The diagram also shows a reference signal (R) connected to the detector. The reference signal is labeled with a time delay τ_r . The diagram is labeled with a time delay τ .